

REMARKS**BACKGROUND**

Claims 1-2, 4-9, 23-24, and 26-27 were previously pending in this application. In the present response, new claims 28-29 have been added, so that claims 1-2, 4-9, 23-24, and 26-29 are currently pending. Newly added claims 28-29 are similar to previously cancelled claims 3 and 25, in view of the fact that the reason for the prior cancellation of those claims has been withdrawn.

Of the pending claims, claims 1 and 23 are independent. Because these independent claims are believed to be patentable over the cited art, the following remarks will focus primarily on these claims. However, it will be understood that the pending dependent claims are also believed to be patentable for at least the same reasons. Favorable reconsideration of all claims is requested

THE §112 REJECTIONS

In the Office Action, claims 1, 5, 6, 23, and 26 stand rejected under 35 U.S.C. §112 for lack of clarity. In particular, the term “small” in these claims is said to be indefinite. Applicants note that this term was also included in claim 27. The noted claims have been amended to overcome this objection and favorable reconsideration is requested.

THE ART REJECTIONS

The gist of the Action with respect to the rejections of claims 1 and 23 is that Aberg¹ and other references allegedly teach certain claim limitations. With respect to the fact that the cited references admittedly operate in apparatuses that are different from the recited ECMP apparatus, the Action states that this distinction is merely an intended use and is not given any patentable weight. Applicants respectfully traverse and request reconsideration for the following reasons.

¹ S. Aberg, “Measurement Of Uncompensated Resistance And Double Layer Capacitance During The Course Of A Dynamic Measurement: Correction For IR Drop And Charging Currents In Arbitrary Voltammetric Techniques,” *Journal of Electroanalytical Chemistry* 419 (1) (1996) pp. 99-103.

The ECMP recitations make some integral to the operation of the method. Even prior to the amendments herein, it will be appreciated that the recitations related to ECMP technology appeared not only in the claim preamble, but throughout the body of the claims, rendering MPEP §§2111 and 2112 inapposite. Moreover, the present amendments further clarify the manner in which the ECMP components are integrated in the invention.

In particular, as clarified, the invention is directed to a system for polishing a surface, wherein the polishing effect is due at least in part to each of electrical, chemical, and mechanical actions. This is distinguished from a simple electrochemical cell. ECMP cells have been known for quite some time, but despite a need for increased control and accuracy, there has been no system that appreciated and eliminated the source of the problem in the way that the present invention has.

Claim 1 recites a method used in an ECMP cell having a mechanical abrasion surface adjacent the working electrode-including the following:

- driving a polishing pad to provide mechanical polishing of a surface within the cell;
- while driving the polishing pad, measuring a voltage transient;
- deriving from the voltage transient a measure of the resistive impedance of the ECMP circuit; and
- using the resistive impedance to modify the process voltages.

While there are certainly a few superficial similarities to techniques used in simple electrochemical cells, the method of claim 1 operates via a different structure in an entirely different environment. None of the prior techniques teaches a polishing pad that operates via mechanical polishing, and thus these references also cannot provide a transient measurement during such mechanical polishing. It will be appreciated that the polishing parameters, surface dynamics, and transfer mechanisms are significantly different in an ECMP cell as compared to simple electrochemical cells.

Thus, it is respectfully submitted that claim 1 is patentable over (i.e., both novel over and nonobvious over) the art of record -- the art does not teach or suggest the limitations of claim 1. Claim 23 contains almost identical recitations to those of claim 1 in the noted

respects, and it is respectfully submitted that claim 23 is patentable for at least the same reasons as claim 1.

Moreover, the dependent claims, each of which depends from one of claims 1 and 23, are patentable for at least the reasons that their respective parent claims are patentable. Thus, favorable reconsideration is respectfully requested regarding the rejections of claims 1-2, 4-9, 23-24, and 26-27.

Conclusion

Applicants respectfully submit that this application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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